DRAFT SAMPLING AND ANALYSIS PLAN
FOR
MANWEILER TRUCKING SPILL
COLORADO SPRINGS, EL PASO COUNTY, COLORADO

Prepared for
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 8

Prepared by
WESTON SOLUTIONS, INC.
Region 8 Superfund Technical Assessment and Response Team

Original Document Date
09/12/2016
Document Revision Date
N/A

For approval signatures, see Worksheet 1 & 2.

Project Dates of Sampling:	August 26 and 27, 2016
Site Spill Identifier No.:	Z8FY
Contract Name:	START IV
Contract No.:	EP-S8-13-01
Technical Direction Document No.:	0002/1608-11
Document Control No.:	W0404.1E.01085

SAP Revision Log

Site: Manweiler Trucking Spill
OSC: Martin McComb
TDD: 0002/1608-11

Date	Revision Number	Reason for Change of Scope/Procedures	SAP Section Superseded	Requested By	Approved By

List of Acronyms

°F	degrees Fahrenheit
ANSI	American National Standards Institute
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERLIS	Comprehensive Environmental Response, Compensation, and Liability System
CLP	Contract Laboratory Program
CO	Contracting Officer
COC	Chain-of-Custody
COR	Contracting Officer Representative
CRL	Central Regional Laboratory
CRQL	Contract Required Quantitation Limits
DRO	Diesel Range Organics
DQO	Data Quality Objective
EDD	electronic data deliverable
ERT	Environmental Response Team
GRO	Gasoline Range Organics
HASP	Health and Safety Plan
HCl	Hydrochloric Acid
HRS	Hazard Ranking System
IDW	investigation-derived waste
MS	matrix spike
MSD	matrix spike duplicate
NA	not applicable
NRC	National Response Center
PAL	Project Action Limit
PID	Photoionization Detector
PM	Project Manager
PQL	Project Quantitation Limit
PPE	Personal Protective Equipment
PT	proficiency testing
PTL	Project Team Lead
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RAS	Routine Analytical Services
SAP	Sampling and Analysis Plan
SAS	Special Analytical Services
SOP	Standard Operating Procedure
START IV	Superfund Technical Assessment and Response Team 4
TAL	Target Analyte List
TBD	to-be-determined
TCL	Target Compound List
TDD	Technical Direction Document
UFP-QAPP	Uniform Federal Policy–Quality Assurance Project Plan

List of Acronyms

U.S. EPA	United States Environmental Protection Agency
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compounds
WAM	Work Assignment Manager
WESTON	Weston Solutions, Inc.

Table of Contents

Section **Page**

Table of Contents (Continued)

List of Tables

List of Figures

List of Attachments

Introduction

This SAP identifies the data collection activities and associated QA/QC measures specific to the Manweiler Trucking Spill (the Site) located in Colorado Springs, El Paso County, Colorado. All data will be generated in accordance with the quality requirements described in the Quality Assurance Project Plan for Region 8 CERCLA Removal and Emergency Response Activities in Colorado, Utah, Wyoming, Montana, North Dakota, and South Dakota (Weston 2013). The purpose of this SAP is to describe site-specific tasks that will be performed in support of the stated objectives. This SAP will reference the QAPP for generic tasks common to all data collection activities including routine procedures for sampling and analysis, sample documentation, equipment decontamination, sample handling, data management, assessment, and data review. Additional site-specific procedures and/or modifications to procedures described in the QAPP are described in the following SAP elements.

This SAP is prepared, reviewed, and approved in accordance with the procedures detailed in the QAPP. Any deviations or modifications to the approved SAP will be documented using the SAP Revision Form. This SAP is produced in accordance with the UFP for QAPPs and consists of the site-specific UFP Worksheets from the QAPP.

Project Organization and Team

Refer to the QAPP Worksheet 3 & 5, and 4, 7, & 8 for the program organizational chart, communication pathways, personnel responsibilities and qualifications, and special personnel training requirements. Project-specific information is provided below.

The following are key individuals identified for this project:

Name	Title/Role	Organization	Receive Copy of SAP?
Eric Sandusky	Project Team Lead	Weston	Yes
Robert Reed	Project Manager	Weston	Yes
Joe Rudi	Scientist	Weston	No
Cordel Schmidt	Scientist	Weston	No
Ellie Kastner	Scientist	Weston	No
Martin McComb	OSC	EPA	Yes

The individuals who will receive a copy of the Program QAPP are specified on QAPP Worksheet 3 & 5 (Project Organization and QAPP Distribution) as noted by the asterisk symbol adjacent to their names. The program QA Manager (QAPP Worksheet 4, 7 & 8) and the Project Manager will maintain the approved QA project plan consisting of the Program QAPP, Project SAP and SAP Document Review Crosswalk. The PTL will distribute the most current copy of the project QA documents via electronic or hard copy, as directed by the OSC. Files for this project will be kept in accordance with Section H.20 of Contract No.: EP-S8-13-01, stating a length of 10 years from close of the project or end of litigation.

QAPP Reference

Weston Solutions, Inc. 2013. Quality Assurance Project Plan for Region 8 CERCLA Removal and Emergency Response Activities in Colorado, Utah, Wyoming, Montana, North Dakota, and South Dakota. Prepared for the START IV Contract. July 2013.

Worksheet 1 & 2 — Title and Approval Page

(UFP-QAPP Manual Section 2.1)
(EPA 2106-G-05 Section 2.2.1)

1. Project Identifying Information

a) Site Name/Project Name: Manweiler Trucking Spill

b) Site Location/Number: Colorado Springs, El Paso County, Colorado

c) Contract/Work Assignment Number: EP-S8-13-01 / 0002/1608-11

2) List Plans and reports from previous investigation relevant to this project.

The undersigned approves the entire UFP-QAPP document which includes this SAP and other elements that are found in the Region 8 Removal and Emergency Response QAPP (Revision 1.0).

Lead Investigative Organization's SAP Author / Project Team Leader

Eric Sandusky/ Project Team lead
Printed Name/Title

9/21/2016
Signature/Date

Lead Investigative Organization's Project Manager:

Robert Reed/ WESTON
Printed Name/Title

For Robert Reed 9/21/2016
Signature/Date

Lead Investigative Organization's Technical Manager:

Robert Reed/ WESTON
Printed Name/Title

For Robert Reed 9/21/2016
Signature/Date

Federal Regulatory Agency OSC/Team Leader

Martin McComb/ OSC
Printed Name/Title

Signature/Date

Federal Regulatory Agency/ Delegated Approval Officer:

Martin McComb/ OSC
Printed Name/Title

Signature/Date

Document Control Numbering System: W0404.1E.01085

Worksheet 9 — Project Planning Session Summary

(UFP-QAPP Manual Section 2.5.1 and Figures 9-12)
(EPA 2106-G-05 Section 2.2.5)

Date of Planning Session: 8/26/2016
Location: Conference call
Purpose: Emergency response notification

Name	Title/Role	Organization	Phone No.	E-mail Address
Martin McComb	OSC	EPA	303-312-6963	McComb.Martin@epa.gov
Eric Sandusky	Associate Geoscientist/ PTL	WESTON	303-729-6132	Eric.Sandusky@westonsolutions.com

Notes/Comments: On the morning of August 26, 2016, a call to the EPA from the Colorado Springs HazMat team reported an estimated 8,000 gallons of fuel was released from an over-turned tanker truck. It was comprised of approximately 6,000 gallons of gasoline and 2,000 gallons of diesel fuel. Fuel entered a storm drain and exited into Bear Creek, and then into Fountain Creek.

Consensus Decisions Made:

- START will mobilize to the site with the emergency response truck and perform water sampling and reconnaissance upon arrival

Action Items:

Action	Responsible Party	Due Date
Develop Health and Safety Plan	Weston	8/26/2016
Develop Equipment List	Weston	8/26/2016
Develop SAP	Weston	TBD

Worksheet 10 — Conceptual Site Model

(UFP-QAPP Manual Section 2.5.2)
(EPA 2106-G-05 Section 2.2.5)

- Problem Definition:
  The Site is on the shoulder of the road in a commercial area with car dealerships surrounding it. The nearest address is 911 Motor City Drive in Colorado Springs, El Paso County Colorado. On August 26, 2016, at approximately 0400, a tanker truck containing 8000 gallons of gasoline and diesel fuel over-turned, releasing some of its contents into the storm drain. The storm drain empties into Bear Creek about 500 feet away. Bear creek empties into Fountain Creek about 300 feet downstream.

- Background Information/Site History:
  The Site (38.821512° N, -104.837449° E) is located in primarily commercial property on the southwest side of Colorado Springs, El Paso County, Colorado (Figure 1). The Site is surrounded by car dealerships and is open to the public. (Figure 2). On August 26, 2016, at approximately 0400 a tanker truck containing 8000 gallons of fuel over-turned, releasing some of its contents into the storm drain.

Worksheet 11 — Project/Data Quality Objectives

(UFP-QAPP Manual Section 2.6.1)
(EPA 2106-G-05 Section 2.2.6

1. **State the Problem**

   Up to 8,000 of gasoline and diesel fuel entered Fountain Creek. Fountain Creek has water intakes located along it to provide water for industrial and agricultural use.

2. **Identify the Goals of the Study**

   START will document site activities, perform sampling of the creek, and document the creek conditions over a two day period. Surface water samples from the creek will be collected and analyzed for Gasoline Range Organics (GRO) and Diesel Range Organics (DRO). Samples will also be collected from six intakes, and at three boom locations downstream of the spill.

3. **Identify Information Inputs**

   Information inputs will be received from sampling results. All sampling results will be imported and published in SCRIBE.

4. **Define the Boundaries of the Study**

   The Site is located at approximately 911 Motor City Drive in Colorado Springs, El Paso County, Colorado. Work will take place from the Site down-stream to mile marker 110 on Interstate 25.

5. **Develop the Analytic Approach**

   Samples will be collected from the outlet side of the intake gates on August 26, 2016 to determine if any fuel components passed that threshold. On August 27, 2016, the inlet side of the gates will be sampled, to determine if the gates can be opened without fear of contamination.

6. **Specify Performance or Acceptance Criteria**

   Sample results will be compared to laboratory method detection limits to determine presence/absence.

7. **Develop the Detailed Plan for Obtaining Data**

   Sampling data will be collected per the sampling design and rationale provided in Worksheet 17. Sampling location nomenclature is described in Worksheet 17. Data will be entered into Scribe for data management and reporting purposes.

Worksheet 14 & 16 —Project Tasks & Schedule

(UFP-QAPP Manual Section 2.8.2)
(EPA 2106-G-05 Section 2.2.4)

Activity	Responsible Party	Planned Start Date	Planned Completion Date	Deliverable(s)	Deliverable Due Date
Develop a Draft SAP and the EPA Region 8 QA Document Review Crosswalk	WESTON	9/6/2016	9/9/2016	Draft SAP and the Draft EPA Region 8 QA Document Review Crosswalk	TBD
Address EPA comments on Draft SAP and the Draft EPA Region 8 QA Document Review Crosswalk	WESTON	TBD	One week after comment are received	SAP and the Final EPA Region 8 QA Document Review Crosswalk	TBD
Develop HASP	WESTON	8/26/2016	8/26/2016	HASP	N/A
Mobilization/Demobilization	WESTON	8/26/2016	8/27/2016	Field Notes	N/A
Sample Collection Tasks	WESTON	N/A	N/A	Field Notes	N/A
Analytical Tasks	WESTON	8/29/2016	8/31/2016	Field Notes/Laboratory Reports	8/31/2016
Quality Control Tasks	WESTON	N/A	N/A	Report of Analyses/Data Package	N/A
Validation	WESTON	N/A	N/A	Validation Summary Report	N/A

Worksheet 14 & 16 —Project Tasks & Schedule

(UFP-QAPP Manual Section 2.8.2)
(EPA 2106-G-05 Section 2.2.4)

Activity	Responsible Party	Planned Start Date	Planned Completion Date	Deliverable(s)	Deliverable Due Date
Summarize Data	WESTON	TBD	TBD	Data Report	TBD
Develop Report	WESTON	TBD	TBD	Draft Report	TBD
Address EPA comments on Draft Report	WESTON	TBD	TBD	Final Report	TBD

Reports to management will be written and distributed in accordance with the QAPP Worksheet #6.

Worksheet 15 — Project Action Limits and Laboratory-Specific Detection/Quantitation Limits

(UFP-QAPP Manual Sections 2.6.2.3 and Figure 15)
(EPA 2106-G-05 Section 2.2.6)

The following information will be provided for each matrix, analyte, analytical method, and concentration level (if applicable).

Matrix: Surface Water
Analytical Method: 8015
Concentration level (if applicable): N/A

Analyte[1]	PAL[2]	PAL Reference[2]	PQL Goal	Laboratory Quantitation Limit[3]	Laboratory Detection Limit[3]
GRO	N/A	N/A	N/A	N/A	N/A
DRO	N/A	N/A	N/A	N/A	N/A

1 CLP laboratories use accepted analytical methods for the isolation, detection, and quantitation of specific target compounds and analytes. The CLP TCL, TAL, and their corresponding CRQL are listed in QAPP Appendix B and QAPP Appendix C, respectively.

2 Links to State regulatory cleanup standards are provided in QAPP Appendix D.

3 Terminology is project/laboratory-specific.

Worksheet 17 — Sampling Design and Rationale

(UFP-QAPP Manual Section 3.1.1)
(EPA 2106-G-05 Section 2.3.1)
Samples will be managed in accordance with SAP Worksheet 26 & 27.

Sample Collection

Surface water samples will be collected directly into glass containers. If safe water access is not possible, a pond sampler will be used to collect the samples. The pond sampler will be decontaminated between samples. Samples will be documented in a logbook.

Sample Identification and Handling

Samples will be analyzed for the parameters listed in SAP Table 1. Requirements for the sample container, volume, preservation, and QC samples are included in Table 1.

Sampling nomenclature will be:

[_ _]	-	[_ _]	-	[_ _]	-	[_ _]
1		2		3		4

Component 1 – Defines the Project:

TS = Tanker Spill

Component 2 – Defines sample type:

SW = Surface Water

Component 3 – Indicates the location number

01 = Las Vegas wastewater treatment facility (WWTF) river-side of gate

02 = Las Vegas WWTF facility-side of gate

03 = Stubbs and Miller Ditch

04 = Chilcott Ditch

05 = Owen & Hall Ditch

06 – Talcott & Cotton Ditch

Worksheet 17 — Sampling Design and Rationale

(UFP-QAPP Manual Section 3.1.1)
(EPA 2106-G-05 Section 2.3.1)
07 – Burke Ditch

B1 – Boom 1 location

B2 – Boom 2 location

08 – Boom 3 location (exit 110)

Component 4 – Indicates the date

YYYYMMDD

Sampling Logistics and Contingencies

- *Site Location and Weather Considerations*

  The site consists of approximately thirty highway miles of Fountain Creek, from the Bear Creek confluence downstream to Piñon. Six intake locations and three boom locations will be sampled. Severely inclement weather could delay sampling.

- *Sampling Schedule Considerations*

  The sampling schedule will be directed by the OSC, as time allows.

Worksheet 18 — Sampling Locations and Methods

(UFP-QAPP Manual Section 3.1.1 and 3.1.2)
(EPA 2106-G-05 Sections 2.3.1 and 2.3.2)

Sampling Location / ID	Matrix	Depth (inches)	Type	Analyte/Analytical Group	Sampling SOP Reference[1]	Comments
TS-SW-##-201608##	Surface Water	N/A	N/A	GRO/DRO	2013	N/A

[1] Sampling SOPs references will be provided in Worksheet 21.

Worksheet 19 & 30 — Sample Containers, Preservation, and Hold Times

(UFP-QAPP Manual Section 3.1.2.2)
(EPA 2106-G-05 Section 2.3.2)

Matrix	Analyte/ Analyte Group	Method/ SOP[1]	Accreditation Expiration Date	Container(s) (number, size & type per sample)[2]	Preservation	Preparation Holding Time	Analytical Holding Time	Data Package Turnaround
Surface Water	GRO	8015	TBD	4 40mL VOAs	HCl	N/A	14 days	24 hrs
Surface water	DRO	8015	TBD	2 1 L glass ambers	N/A	40 days	14 days	24 hrs

[1] Refer to the Analytical SOP References table (Worksheet 23).

[2] The minimum sample size is based on analysis allowing for sufficient sample for reanalysis. Additional volume is needed for the laboratory MS/MSD sample analysis.

[3] Refers to requirements after processing of aquatic animal tissue by laboratory.

Worksheet 20 — Field Quality Control Sample Summary

(UFP-QAPP Manual Sections 3.1.1 and 3.1.2)
(EPA 2106-G-05 Section 2.3.5)

Matrix	Analyte/Analytical Group	No. of Field Samples[1]	No. of Field Duplicates	No. of MS/MSD	No. of Field Blanks	No. of Equip. Blanks	No. of Trip Blanks	No. of Other	Total No. of Samples to Laboratory
Surface Water	GRO/DRO	17	2	1	N/A	N/A	N/A	N/A	19

[1] Samples that are collected at different depths at the same location, and analyzed separately, will be counted as separate field samples. Even if they are taken from the same container as the parent field sample, MS/MSDs are counted separately, because they are analyzed separately. If composite samples or incremental samples are collected, only the sample that will be analyzed will be included; subsamples and increments will not be listed separately.

The number and types of QC samples will be based on project-specific DQOs and this worksheet will be adapted, as necessary, to accommodate project-specific requirements. Project-specific QC samples may include field duplicate, field blank, equipment blank, trip blank, field split, MS/MSD, and PT samples and will be collected in accordance with the frequencies recorded on QAPP Worksheet 12.

Quality Assurance Assessment and Corrective Actions are found in QAPP Worksheet #28.

Worksheet 21 — Field SOPs

(UFP-QAPP Manual Section 3.1.2)
(EPA 2106-G-05 Section 2.3.2)

SOP Number or Reference	Title, Revision, Date, and URL (if available)	Originating Organization	SOP Option or Equipment Type (if SOP provides different options)	Modified for Project? Y/N	Comments
2013	Surface Water Sampling, 6/2011	U.S. EPA, ERT	N/A	N	SOPs are available in QAPP Appendix I
2001	General Field Sampling Guidelines, 6/2011	U.S. EPA, ERT	N/A	N	SOPs are available in QAPP Appendix I

Investigation Derived Waste

During sampling activities, IDW may be generated. IDW may consist of decontamination fluids, excess sampled media (e.g., soil, sediment, water, etc.), disposable sampling supplies, and PPE (e.g., Tyvek/Saranex coveralls, gloves, booties, etc.). Handling of IDW will be performed according with SOP 2049 as listed above as well as procedures described in *Management of Investigation Derived Wastes during Site Inspections (May 1991)*(QAPP Appendix S). Waste disposal for IDW will be dependent upon classification of the waste as either RCRA hazardous or RCRA nonhazardous waste.

Decontamination

General decontamination procedures are described in EPA ERT SOP #2006 Sampling Equipment Decontamination.

It is anticipated that START sample collection will exclusively use dedicated/ disposable sampling tools. If a pond sampler is used, decontamination will consist of initial brushing to remove gross particulate, a rinse with alconox, followed by a distilled water rinse.

WESTON will review existing information and may conduct sampling for removal/emergency response activities. Environmental samples will be collected for RAS through the CLP, SAS analysis at the EPA Region 8 CRL, or by WESTON-subcontracted laboratories. CLP-collected environmental samples will adhere to the procedures described in the *EPA Contract Laboratory Program Guidance for Field Samplers (January 2011)* (QAPP Appendix E).

Worksheet 22 — Field Equipment Calibration, Maintenance, Testing, and Inspection

(UFP-QAPP Manual Section 3.1.2.4)
(EPA 2106-G-05 Section 2.3.6)

Field Equipment	Calibration Activity	Maintenance Activity	Testing Activity	Inspection Activity	Frequency	Acceptance Criteria	Corrective Action	Title or Position of Responsible Person	Verification	SOP Reference[1]
PID and/or FID	Calibrate with span gas, as recommended by manufacturer	Check battery	Calibration check	Visually inspect equipment	Refer to instrument SOP	Refer to instrument SOP	Refer to instrument SOP	Field personnel	WAM/COR	G-15/ MultiRae/ TVA - 1000

[1] Refer to Field SOPs (Worksheet 21) and Analytical SOPs (Worksheet 23).

Worksheet 23 — Analytical SOPs

(UFP-QAPP Manual Section 3.2.1)
(EPA 2106-G-05 Section 2.3.4)

Lab SOP Number[1]	Title, Revision Date, and/or Number and URL (if available)	Screening or Definitive Data	Matrix/Analytical Group	SOP Option or Equipment Type	Modified for Project? (Y/N)
TBD	SW-846 Method 8015B, Revision 2, TOTAL PETROLEUM HYDROCARBONS (TPH) as Gasoline and Diesel, 12/1996, https://www.epa.gov/sites/production/files/2015-06/documents/8015.pdf	Definitive	Water	GC	N

Worksheet 24 — Analytical Instrument Calibration

(UFP-QAPP Manual Section 3.2.2)
(EPA 2106-G-05 Section 2.3.6)

As stated in Worksheet 22, WESTON field personnel are responsible for the calibration of WESTON and sub-contractor provided analytical field equipment. Documented and approved procedures will be used for calibrating measuring and testing equipment. Widely accepted procedures, such as those published by U.S. EPA and ASTM, or procedures provided by manufacturers in equipment manuals will be adopted.

The responsibility for the calibration of laboratory equipment rests with the selected laboratories. Each type of instrumentation and each U.S. EPA-approved method have specific requirements for the calibration procedures, depending on the analytes of interest and the sample medium. The calibration procedures and frequencies of the equipment used to perform the analyses will be in accordance with requirements established by the U.S. EPA. The laboratory QA manager will be responsible for ensuring that the laboratory instrumentation is maintained in accordance with specifications. Individual laboratory SOPs will be followed for corrective actions and preventative maintenance frequencies. Laboratory quality control, calibration procedures, corrective action procedures, and instrument preventative maintenance will be included in an addendum to this QAPP once the laboratories have been selected for each of the TBA sites. Items may include, but are not limited to those identified in the table below.

Worksheet 24 — Analytical Instrument Calibration

(UFP-QAPP Manual Section 3.2.2)
(EPA 2106-G-05 Section 2.3.6)

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action	Title/Position Responsible for CA	SOP Reference[1]
GC	See 8015	Initial calibration, 12-hour calibration, every 10 samples, and end of run, and when verification criteria are not met	Correlation coefficient (r) of 0.99 for each compound and calibration verification % difference <25%	Inspect system; correct problem; re-run calibration and affected samples	Lab Manager/ Analyst	8015

Worksheet 26 & 27 — Sample Handling, Custody, and Disposal

(UFP-QAPP Manual Section 3.3)
(EPA 2106-G-05 Manual Section 2.3.3)

Examples of field form (QAPP Appendix F), chain-of-custody (QAPP Appendix G), and sample label and custody seal (QAPP Appendix H) documentation are in the QAPP. SOPs for sample handling are identified below and are located in QAPP Appendix I.

Sampling Organization: WESTON
Laboratory: Accutest
.
Method of sample delivery (shipper/carrier): Drop off
Number of days from reporting until sample disposal: N/A

Activity	Organization and Title or Position of Person Responsible for the Activity	SOP Reference
Sample Labeling	START Field Personnel	QAPP Appendix I, SOP G-1 & G-3
Chain-of-Custody Form Completion	START Field Personnel	QAPP Appendix I, SOP G-8
Sample Packaging	START Field Personnel	QAPP Appendix I, SOP G-9
Shipping Coordination	START Field Personnel	QAPP, Appendix I, SOP G-9
Sample Receipt, Inspection, & Log-in	Laboratory Sample Custodian	Laboratory SOP
Sample Custody and Storage	Laboratory Sample Custodian /Laboratory Analytical Personnel	Laboratory SOP
Sample Disposal	START Field Personnel/Laboratory Sample Custodian /Laboratory Analytical Personnel	QAPP Appendix I, SOP G-1 & G-3 Laboratory SOP

Supplies and consumables can be received at a WESTON office, U.S. EPA Warehouse or at a site. When supplies are received at a WESTON office or U.S. EPA Warehouse, the PM or PTL will sort the supplies according to vendor, check packing slips against purchase orders, and inspect the condition of all supplies before the supplies are accepted for use on a project. If the supplies do not meet the acceptance criteria, deficiencies will be noted on the packing slip and purchase order. The item will then be returned to the vendor for replacement or repair. Procedures for receiving supplies and consumables in the field are similar to those described above. Upon receipt, items will be inspected by the WESTON PM or PTL against the acceptance criteria. Any deficiencies or problems will be noted in the field logbook, and deficient items will be returned for immediate replacement.

Worksheet 36 — Data Validation Procedures

(UFP-QAPP Manual Section 5.2.2)
(EPA 2106-G-05 Section 2.5.1)

Data Validator: WESTON

Analytical Group/ Method	Data Deliverable Requirements	Analytical Specifications	MPC	Percent of Data Packages to be Validated	Percent of Raw Data Reviewed	Percent of Results to be Recalculated	Validation Procedure	Validation Code[1]	Electronic Validation Program/ Version
GRO-DRO/8015	Scribe EDD Stage 2A	TBD	Worksheets 11, 12, 19 & 30	100	0	0	U.S. EPA Stage 2A	S2AVE	N/A

[1] Validation Codes are provided in QAPP Appendix M.

Validation will be performed on all laboratory analytical data unless a defined quantity or percentage of samples is identified by the U.S. EPA in the Technical Direction Document or during the project scoping meeting on a project-specific basis.. Project validation criteria as per QAPP Worksheets 12, 15, 19 & 30, 28, and 36, and cited EPA SW-846 methodology will be used. WESTON-contracted laboratory data packages will be verified and validated using a Stage 2A validation, as described in the EPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009) (QAPP Appendix J) unless otherwise specified by the U.S. EPA WAM/COR during the development of the DQOs. Validation Qualifiers will be applied using the following hierarchy: Region 8 UFP-QAPP for Removal Actions and Emergency Responses; the site-specific SAP, and/or QAPP; *EPA National Functional Guidelines for Organic Data Review* (QAPP Appendix K); *EPA National Functional Guidelines for Inorganic Data Review* (QAPP Appendix L); EPA Publication SW-846; and the laboratory-specific SOP. Methods for which no data validation guidelines exist will be validated following the guidance deemed most appropriate by the data validator.

The data validator will receive all laboratory packages and analytical results electronically. Additionally, the validator will be required to submit final validation reports via PDF format and must provide an annotated laboratory analytical result EDD with applicable data validation qualifiers (QAPP Appendix M) identified in the site-specific SAP, and/or QAPP, and/or result value modifications. The Delegated QA Manager will use EPA document *Using Qualified Data to Document an Observed Release and Observed Contamination* (July 1996) to aid in determining the use of qualified data to document all observed release and observed contamination by chemical analysis under U.S. EPA's HRS. Approved data will be released by the Delegated QA Manager for reporting.

QAPP Worksheet 35 describes the issue resolution process and the individual responsible for conveying results to data users. For issues internal to the laboratory, the laboratory PM will be the responsible party for data resolution issues and will be responsible for conveying

Worksheet 36 — Data Validation Procedures

(UFP-QAPP Manual Section 5.2.2)
(EPA 2106-G-05 Section 2.5.1)

this information to the Delegate QA Manager or delegated authority. For external laboratory data and quality issues, the Delegated QA Manager or delegated authority will provide issue resolution information and will be the responsible party for conveying this information to data users. For quality documents, reports, and field information, the Delegated QA Manager, delegated authority, or other persons identified in the table in QAPP Worksheet 35 will be responsible for issue resolutions of such items and will be the responsible party for conveying that information to data users.

TABLES

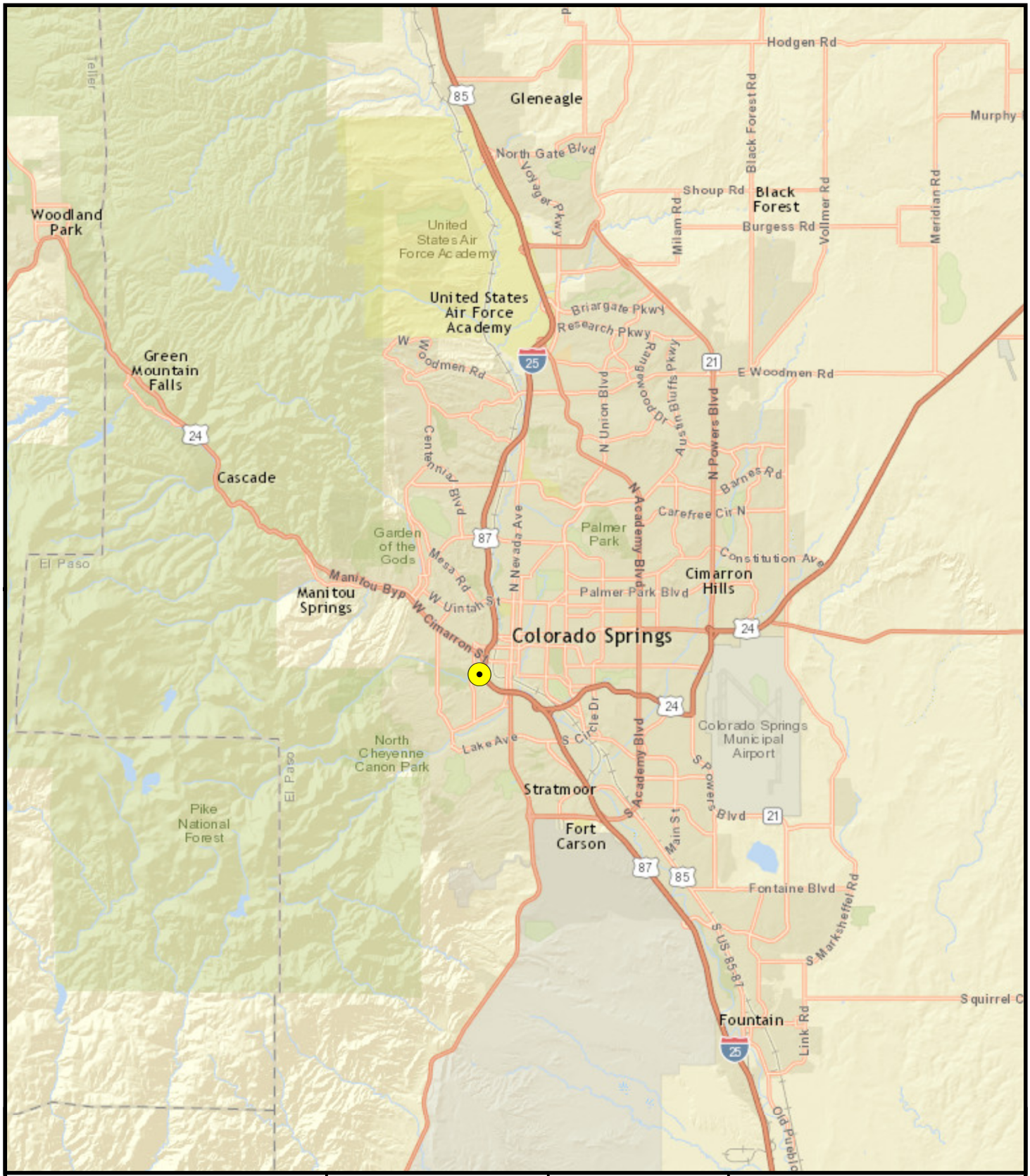
Table 1
Sampling and Analysis Summary

Site: Manweiler Trucking Spill
OSC: Martin McComb
TDD: 0002/1608-11

Matrix	Analytical Parameter	Analytical Method	Containers (Numbers, Size, and Type)	Preservation Requirements	Number of Sampling Locations	Number of Field Duplicates	Number of MS/ MSDs[2]	Number of Blanks (Trip, Field, Equipment. Rinsate)[1]	Total Number of Samples to Lab[3]	Holding Time
Surface Water	GRO	8015	4 40 mL VOA	HCl	17	2	1	N/A	19	14 days
Surface Water	DRO	8015	2 1 L amber glass	None	17	2	1	N/A	19	14 days

Notes:
[1] Trip blanks are only required for VOCs in water samples.
[2] For the samples designated for MS/MSDs, triple volume is required for VOCs and double volume for other water parameters.
[3] Total number of samples to the laboratory does not include MS/MSD samples.

FIGURES



Legend

- Site Location

0 1.75 3.5 7 Miles

N

Prepared for:
U.S. EPA Region 8

Contract No.:
EP-S8-13-01

TDD:
1608-11

TO:
0002

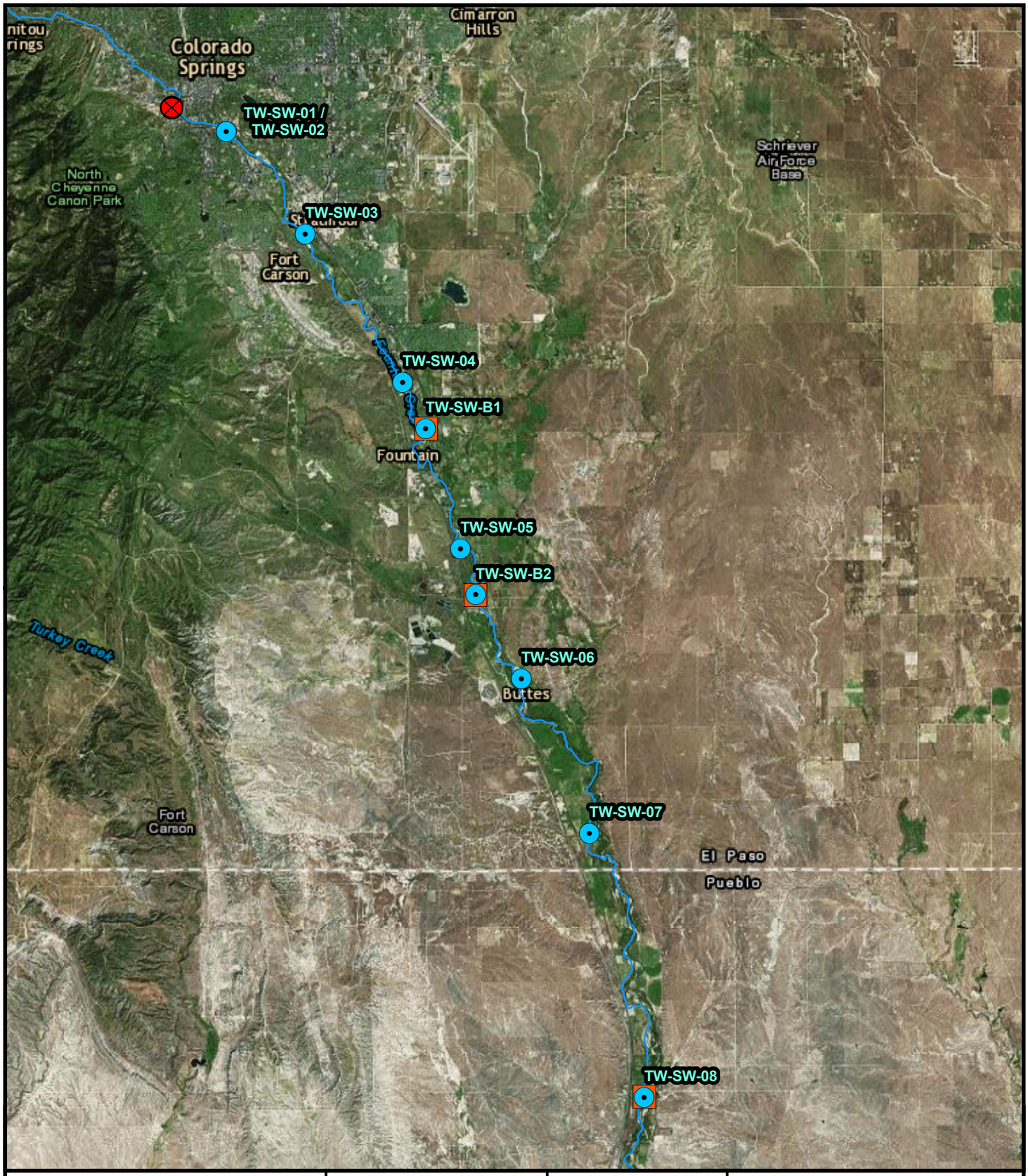
The source of this map image is Esri, used by EPA with Esri's permission

Prepared By:
Weston Solutions, Inc.
START IV

Suite 100
1435 Garrison Street
Lakewood, CO 80215

FIGURE 1
SITE LOCATION MAP
MANWEILER TRUCKING SPILL
COLORADO SPRINGS, COLORADO

Date: 9/21/2016



Legend

- Spill Location
- Sample Location
- Boom Location
- River

0 1.75 3.5 7 Miles

N

Prepared for:
U.S. EPA Region 8

Contract No.:
EP-S8-13-01

TDD:
1608-11

TO:
0002

The source of this map image is Esri, used by EPA with Esri's permission

Prepared By:
Weston Solutions, Inc.
START IV

Suite 100
1435 Garrison Street
Lakewood, CO 80215

FIGURE 2
RESPONSE ACTIVITIES MAP
MANWEILER TRUCKING SPILL
COLORADO SPRINGS, COLORADO

Date: 9/21/2016

ATTACHMENTS

EPA REGION 8 QA DOCUMENT REVIEW CROSSWALK

QAPP/FSP/SAP for:		**Entity** *Weston START IV Contract*	**Regulatory Authority and/or Funding Mechanism**		**40 CFR 31 for Grants**
(check appropriate box)					**48 CFR Part 46 for Contracts**
	GRANTEE	Region 8 START Contractor			**Interagency Agreement**
X	**CONTRACTOR**				**EPA Administrative Order**
	EPA				**EPA Program Funding**
	Other				**EPA Program Regulation**
					EPA CIO 2105
Document Title *[Note: Title will be repeated in Header]*		Draft Sampling and Analysis Plan			
QAPP/FSP/SAP Preparer		Eric Sandusky			
Period of Performance (of QAPP/FSP/SAP)		1 year from date of EPA approval of Task Level QAPP	**Date Submitted for Review**		9/12/2016
EPA Project Officer		Joyce Ackerman	**PO Phone #**		303-312-6822
EPA Project Manager		Martin McComb	**PM Phone #**		303-312-6963
QA Program Reviewer or Approving Official			**Date of Review**		

Documents to Review:

1. QAPP written by Grantee or EPA must also include for review:
   Work Plan(WP) / Statement of Work (SOW) / Program Plan (PP) / Research Proposal (RP)

2. QAPP written by Contractor must also include for review:
   a) Copy of signed QARF for Task Order
   b) Copy of Task Order SOW
   c) Made available hard or electronic copy of approved QMP
   d) If QMP not approved, provide Contract SOW

3. For a Field Sampling Plan (FSP) or Sampling & Analyses Plan (SAP), the Project QAPP must also be provided.

   OR

   The FSP or SAP must be clearly identified as a stand-alone QA document and must contain all QAPP required elements (Project Management, Data Generation/Acquisition, Assessment and Oversight, and Data Validation and Usability).

Documents Submitted for QAPP Review:

1. QA Document(s) submitted for review:

QA Document	Document Date	Document Stand-alone	Document with QAPP
QAPP		Yes / No	
FSP		Yes / No	Yes / No
SAP		Yes / No	Yes / No
SOP(s)		Yes / No	Yes / No

2. WP/SOW/TO/PP/RP Date _____

WP/SOW/TO/RP Performance Period _____

3. QA document consistent with the:

WP/SOW/PP for grants? Yes / No

SOW/TO for contracts? Yes / No

4. QARF signed by R8 QAM Yes / No / NA

Funding Mechanism IA / contract / grant / NA

Amount _____

Summary of Comments *(highlight significant concerns/issues)***:**

1. Comment #1
2. Comment #2
3. Comment #3
4. **The** Region 8 START Contractor **must address the comments in the Summary of Comments, as well as those identified in the Comment section(s) that includes a "Response (date)" and Resolved (date)".**

Element	Acceptable *Yes/No/NA*	Location	Comments
A. Project Management			
A1. Title and Approval Sheet			
a. Contains project title	Y	SAP Title Page and Introduction SAP Worksheet 1 & 2	
b. Date and revision number line (for when needed)	Y	SAP Title Page and Revison Log	
c. Indicates organization's name	Y	SAP Title Page	
d. Date and signature line for organization's project manager	Y	QAPP and SAP Worksheets 1 & 2	
e. Date and signature line for organization's QA manager	Y	QAPP Worksheets 1 & 2	
f. Other date and signatures lines, as needed	Y	SAP and QAPP Worksheets 1 & 2	
A2. Table of Contents			
a. Lists QA Project Plan information sections	Y	SAP Table of Contents, SAP List of Appendices	
b. Document control information indicated	Y	SAP Worksheet 1 & 2	
A3. Distribution List			
Includes all individuals who are to receive a copy of the QA Project Plan and identifies their organization	Y	SAP Introduction QAPP Worksheet 3 & 5	
A4. Project/Task Organization			
a. Identifies key individuals involved in all major aspects of the project, including contractors	Y	QAPP Worksheet 3 & 5, SAP Introduction	
b. Discusses their responsibilities	Y	QAPP Worksheet 4, 7 & 8; SAP Introduction	
c. Project QA Manager position indicates independence from unit generating data	Y	QAPP Worksheet 3 & 5	
d. Identifies individual responsible for maintaining the official, approved QA Project Plan	Y	SAP Introduction QAPP Worksheet 4, 7 & 8	
e. Organizational chart shows lines of authority and reporting responsibilities	Y	QAPP Worksheet 3 & 5; SAP Introduction	
A5. Problem Definition/Background			
a. States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained	Y	SAP Worksheet 11	
b. Clearly explains the reason (site background or historical context) for initiating this project	Y	SAP Worksheet 10	

Element	Acceptable *Yes/No/NA*	Location	Comments
c. Identifies regulatory information, applicable criteria, action limits, etc. necessary to the project	Y	SAP Worksheets 10, 11, 15	
A6. Project/Task Description			
a. Summarizes work to be performed, for example, measurements to be made, data files to be obtained, etc., that support the projects goals	Y	SAP Worksheets 11, 14 & 16	
b. Provides work schedule indicating critical project points, e.g., start and completion dates for activities such as sampling, analysis, data or file reviews, and assessments	Y		
c. Details geographical locations to be studied, including maps where possible	Y	SAP Worksheets 10, 11	
d. Discusses resource and time constraints, if applicable	Y		
A7. Quality Objectives and Criteria			
a. Identifies - performance/measurement criteria for all information to be collected and acceptance criteria for information obtained from previous studies, - including project action limits and laboratory detection limits and - range of anticipated concentrations of each parameter of interest	Y	SAP Worksheets 11, 15, QAPP Worksheets 12.1 - 12.4	
b. Discusses precision	Y	QAPP Worksheet 37	
c. Addresses bias	Y		
d. Discusses representativeness	Y		
e. Identifies the need for completeness	Y		
f. Describes the need for comparability	Y		
g. Discusses desired method sensitivity	Y		
A8. Special Training/Certifications			
a. Identifies any project personnel specialized training or certifications	Y	QAPP Worksheet 4, 7 & 8	
b. Discusses how this training will be provided	Y		
c. Indicates personnel responsible for assuring training/certifications are satisfied	Y		
d. identifies where this information is documented	Y		
A9. Documentation and Records			

Element	Acceptable *Yes/No/NA*	Location	Comments
a. Identifies report format and summarizes all data report package information	Y	SAP Worksheets 14 & 16 QAPP Worksheet 29	
b. Lists all other project documents, records, and electronic files that will be produced	Y	SAP Worksheet 14 & 16	
c. Identifies where project information should be kept and for how long	Y	SAP Introduction QAPP Worksheet 29	
d. Discusses back up plans for records stored electronically	Y	QAPP Worksheet 29	
e. States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individual responsible for this	Y	SAP Introduction QAPP Worksheet 4 & 5	
B. Data Generation/Acquisition			
B1. Sampling Process Design (Experimental Design)			
a. Describes and justifies design strategy, indicating size of the area, volume, or time period to be represented by a sample	Y	SAP Worksheets 11, 17 SAP Figure 3, as needed	
b. Details the type and total number of sample types/matrix or test runs/trials expected and needed	Y	SAP Worksheets 11, 17, 18 SAP Figure 3, as needed	
c. Indicates where samples should be taken, how sites will be identified/located	Y		
d. Discusses what to do if sampling sites become inaccessible	Y	SAP Worksheet 17	
e. Identifies project activity schedules such as each sampling event, times samples should be sent to the laboratory, etc.	Y		
f. Specifies what information is critical and what is for informational purposes only	Y		
g. Identifies sources of variability and how this variability should be reconciled with project information	Y		
B2. Sampling Methods			
a. Identifies all sampling SOPs by number, date, and regulatory citation, indicating sampling options or modifications to be taken	Y	SAP Worksheet 21	
b. Indicates how each sample/matrix type should be collected	Y	SAP Worksheet 17 QAPP Worksheet 19 & 30	

Element	Acceptable *Yes/No/NA*	Location	Comments
c. If in situ monitoring, indicates how instruments should be deployed and operated to avoid contamination and ensure maintenance of proper data	Y	SAP Worksheet 22	
d. If continuous monitoring, indicates averaging time and how instruments should store and maintain raw data, or data averages	Y	SAP Worksheet 22	
e. Indicates how samples are to be homogenized, composited, split, or filtered, if needed	Y	SAP Worksheet 17	
f. Indicates what sample containers and sample volumes should be used	Y	SAP Worksheet 17 SAP Table 1 QAPP Worksheet 19 & 30	
g. Identifies whether samples should be preserved and indicates methods that should be followed	Y		
h. Indicates whether sampling equipment and samplers should be cleaned and/or decontaminated, identifying how this should be done and by-products disposed of	Y	SAP Worksheet 21	
i. Identifies any equipment and support facilities needed	Y	SAP Worksheet 22	
j. Addresses actions to be taken when problems occur, identifying individual(s) responsible for corrective action and how this should be documented	Y	SAP Worksheet 17 QAPP Worksheet 31, 32 & 33	
B3. Sample Handling and Custody			
a. States maximum holding times allowed from sample collection to extraction and/or analysis for each sample type and, for in-situ or continuous monitoring, the maximum time before retrieval of information	Y	SAP and QAPP Worksheet 19 & 30	
b. Identifies how samples or information should be physically handled, transported, and then received and held in the laboratory or office (including temperature upon receipt)	Y	SAP Worksheet 26 & 27	
c. Indicates how sample or information handling and custody information should be documented, such as in field notebooks and forms, identifying individual responsible	Y	SAP Worksheets 17, 26 & 27	
d. Discusses system for identifying samples, for example, numbering system, sample tags and labels, and attaches forms to the plan	Y	SAP Worksheet 11, 17, 18, 26 & 27	COC Generated in Scribe
e. Identifies chain-of-custody procedures and includes form to track custody	Y		
B4. Analytical Methods			

Element	Acceptable *Yes/No/NA*	Location	Comments
a. Identifies all analytical SOPs (field, laboratory and/or office) that should be followed by number, date, and regulatory citation, indicating options or modifications to be taken, such as sub-sampling and extraction procedures	Y	SAP Worksheet 23	
b. Identifies equipment or instrumentation needed	Y	SAP Worksheets 23, 24	
c. Specifies any specific method performance criteria	Y	SAP Worksheet 22, 24	Worksheet 22 - Field Equipment Worksheet 24 - Analytical Instruments
d. Identifies procedures to follow when failures occur, identifying individual responsible for corrective action and appropriate documentation	Y		
e. Identifies sample disposal procedures	Y	SAP Worksheet 26 & 27 QAPP Appendix I	
f. Specifies laboratory turnaround times needed	Y	SAP Worksheet 26 & 27 SAP and QAPP Worksheet 19 & 30	
g. Provides method validation information and SOPs for nonstandard methods	Y	SAP Worksheets 23 QAPP Worksheets 25 & 28	
B5. Quality Control			
a. For each type of sampling, analysis, or measurement technique, identifies QC activities which should be used, for example, blanks, spikes, duplicates, etc., and at what frequency	Y	SAP Worksheet 20	
b. Details what should be done when control limits are exceeded, and how effectiveness of control actions will be determined and documented	Y	SAP Worksheets 26 & 27, QAPP Worksheet 25 & 28	
c. Identifies procedures and formulas for calculating applicable QC statistics, for example, for precision, bias, outliers and missing data	Y	QAPP Worksheet 37	
B6. Instrument/Equipment Testing, Inspection, and Maintenance			
a. Identifies field and laboratory equipment needing periodic maintenance, and the schedule for this	Y	SAP Worksheets 22, 24 QAPP Worksheet 25	
b. Identifies testing criteria	Y		
c. Notes availability and location of spare parts	Y		
d. Indicates procedures in place for inspecting equipment before usage	Y	SAP Worksheets 22, 24 QAPP Worksheet 25	
e. Identifies individual(s) responsible for testing, inspection and maintenance	Y		

Element	Acceptable *Yes/No/NA*	Location	Comments
f. Indicates how deficiencies found should be resolved, re-inspections performed, and effectiveness of corrective action determined and documented	Y	SAP Worksheets 22, 24	
B7. Instrument/Equipment Calibration and Frequency			
a. Identifies equipment, tools, and instruments that should be calibrated and the frequency for this calibration	Y	SAP Worksheet 22 QAPP Worksheet 24	
b. Describes how calibrations should be performed and documented, indicating test criteria and standards or certified equipment	Y	SAP Worksheet 22 QAPP Worksheet 24, 25	
c. Identifies how deficiencies should be resolved and documented	Y		
B8. Inspection/Acceptance for Supplies and Consumables			
a. Identifies critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials	Y	SAP Worksheet 22, 26 & 27 SAP Attachment E, as needed	
b. Identifies the individual(s) responsible for this	Y		
B9. Use of Existing Data (Non-direct Measurements)			
a. Identifies data sources, for example, computer databases or literature files, or models that should be accessed and used	Y	SAP Worksheet 11 QAPP Worksheet 13	
b. Describes the intended use of this information and the rationale for their selection, i.e., its relevance to project	Y		
c. Indicates the acceptance criteria for these data sources and/or models	Y		
d. Identifies key resources/support facilities needed	Y	SAP Worksheet 11 QAPP Worksheet 13	
e. Describes how limits to validity and operating conditions should be determined, for example, internal checks of the program and Beta testing	Y		
B10. Data Management			
a. Describes data management scheme from field to final use and storage	Y	SAP Worksheets 26 & 27, QAPP Worksheets 29 & 35 DMP section 3a flow diagram, Section 4 Data Collection, Processing and Field Storage, Section 5 Data Verification, Section 6 Data Reporting and Storage.	
b. Discusses standard record-keeping and tracking practices, and the document control system or cites other written documentation such as SOPs	Y	SAP Worksheets 26 & 27 QAPP Worksheet 29	

Element	Acceptable *Yes/No/NA*	Location	Comments
c. Identifies data handling equipment/procedures that should be used to process, compile, analyze, and transmit data reliably and accurately	Y	SAP Worksheets 22, 23, QAPP Worksheet 29 DMP Section 4 Data Collection, Processing and Field Storage and Section 5 Data Verification	
d. Identifies individual(s) responsible for this	Y	QAPP Worksheet 29 DMP section 3b Roles and responsibilities, DMP section 6a Data Analysis & Reporting	
e. Describes the process for data archival and retrieval	Y		
f. Describes procedures to demonstrate acceptability of hardware and software configurations	Y	SAP Worksheets 22, 23 DMP Section 4b Data Collection SOPs & Checklists, 4c Data Processing SOPs & Checklists, 4d Data Storage SOPs & Checklists	
g. Attaches checklists and forms that should be used	Y	DMP Section 4b Data Collection SOPs & Checklists, 4c Data Processing SOPs & Checklists, 4d Data Storage SOPs & Checklists	
C. Assessment and Oversight			
C1. Assessments and Response Actions			
a. Lists the number, frequency, and type of assessment activities that should be conducted, with the approximate dates	Y	QAPP Worksheet 31, 32 & 33	
b. Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders, and any other possible participants in the assessment process	Y		
c. Describes how and to whom assessment information should be reported	Y		
d. Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented	Y		
C2. Reports to Management			
a. Identifies what project QA status reports are needed and how frequently	Y	QAPP Worksheet 31, 32 & 33	
b. Identifies who should write these reports and who should receive this information	Y	QAPP Worksheet 31, 32 & 33	
D. Data Validation and Usability			
D1. Data Review, Verification, and Validation			
Describes criteria that should be used for accepting, rejecting, or qualifying project data	Y	SAP Worksheet 36	
D2. Verification and Validation Methods			

Element	Acceptable *Yes/No/NA*	Location	Comments
a. Describes process for data verification and validation, providing SOPs and indicating what data validation software should be used, if any	Y	QAPP Worksheets 34, 35, 36	
b. Identifies who is responsible for verifying and validating different components of the project data/information, for example, chain-of-custody forms, receipt logs, calibration information, etc.	Y	QAPP Worksheet 35	
c. Identifies issue resolution process, and method and individual responsible for conveying these results to data users	Y	QAPP Worksheets 35 SAP Worksheet 36	
d. Attaches checklists, forms, and calculations	Y	QAPP Worksheet 34, 37 QAPP Appendix J	
D3. Reconciliation with User Requirements			
a. Describes procedures to evaluate the uncertainty of the validated data	Y	QAPP Worksheets 12, 37 QAPP Appendix J	
b. Describes how limitations on data use should be reported to the data users	Y	QAPP Worksheet 37	
D3. Reconciliation with User Requirements			
a. Describes procedures to evaluate the uncertainty of the validated data	Y	SAP Worksheets 11 QAPP Worksheets 12, 35, 36	
b. Describes how limitations on data use should be reported to the data users	Y	QAPP Worksheet 12	

	This SSDMP is intended to ensure data integrity and consistency by providing guidance for data collection by field personnel and subsequent data management activities. This document is intended to be used in conjunction with the Regional Data Management Plan (RDMP) and includes the details specific to this site or incident.	**Site-Specific Data Management Plan (SSDMP)**			
		Site Name:	Manweiler Trucking Spill	**Site ID:**	Z8FY
		OSC:	Martin McComb	**Date Initiated:**	8/26/16
		Data Manager:	Eric Sandusky	**Last Updated:**	9/12/16

SECTION 1: TASKING

The following documents the data streams and data management tasks will be supported at the site (X all that apply).

Documents and Images

X	Data Stream	Repository	Reporting Requirements
X	Site Documents	EPAOSC.net	Upload electronic files and metadata to repository and generate a log of files in the repository.
X	Site Photos		

Analytical

X	Data Stream	Repository	Reporting Requirements
X	Sampling Data	Scribe.net	Publish data to repository and generate data summary tables and figures for Final Report.
X	Lab Results		
X	Validation Qualifiers		

Monitoring

X	Data Stream	Repository	Reporting Requirements
	Field Monitoring	Scribe.net	Publish data to repository and generate data summary tables and figures for Final Report.
	Viper Monitoring	Viper.net	
	Reconnaissance	ERT Cloud	

Other

X	Task	Documents/Images	Analytical	Monitoring
X	Use the following data streams to deploy a site-specific spatial data viewer:	X	X	
	Manage the following data streams collected by other agencies, contractors or PRPs:			

SECTION 2: DATA MANAGEMENT PRACTICES

The following table outlines the specific requirements for various data types being collected during the project.

Data Stream[1]	Data Source[2]	Site Specific Procedure (Y/N)[3]				
		Collection	Processing	Storage	Verification	Reporting
Lab Results	*EPA Region 8 ESAT EDD*	*N*	*N*	*N*	*N*	*N*

1: Category of data to be managed at the site. Must match data stream(s) selected in Section 1. Create one line per category AND source.
2: List the equipment or data file that serves as the source of the data (i.e. TVA 1000, camera, iPad, Trimble GPS, lab EDD). If secondary data, include the organization who is providing the data.
3: Y – indicates a site specific procedure is employed and an Appendix and/or Section 3 has been included to document the details, N – indicates data management follows procedures outlined in the RDMP.

SECTION 3: SITE-SPECIFIC DATA ELEMENTS

The following table documents deviations from the data standards identified in the RDMP.

Data Element	Required	Description	Format	Repository Table/Field	Valid Values*
Sample ID	Y	Unique identifier for samples.	Text	Scribe	TS-SW-##-YYYYMMDD